



SMC2208USB/ETH

USB to 10/100 Fast Ethernet Converter

- USB specification 1.1
- IEEE 802.3 and IEEE 802.3u
- Provides full-duplex to enhance throughput
- Support USB suspend / Resume detection logic
- Support Windows Plug & Play



Installation Guide
SMC2208USB/ETH

EZ Connect USB/ETH User Guide

From SMC's EZ line of low-cost workgroup LAN solutions

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COMPLIANCES

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in commercial environment.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual may cause harmful interference to radio communications. Its operation in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

EC Conformance Declaration - Class A

SMC contact for these products in Europe is:

SMC Networks Europe,
Edificio Conata II,
Calle Fructuos Gelabert 6-8, 2o, 4a,
08970 - Sant Joan Despi,
Barcelona, Spain.

This information technology equipment complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC, and carries the CE Mark accordingly. It conforms to the following specifications:

EMC: EN55024 (1998)/CISPR-22 (1995) Class A

IEC 61000-4-2 (1995) 4 kV CD, 8 KV AD

IEC 61000-4-3 (1995) 3 V/m

IEC 61000-4-4 (1995) 1.0 kV - (power line)

0.5 kV - (signal line)

IEC 61000-4-5 (1995) 2 kV - (line to line)

1 kV - (line to ground)

IEC 61000-4-6 (1995) 3 Vrms

IEC 61000-4-11 (1995) Voltage dip >95% - 10 ms

30% - 500 ms

60% - 100 ms

Voltage interruption >95% - 5000 ms

Industry Canada - Class A

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of Industry Canada.

Cet appareil numerique respecte les limites de bruits radioelectriques applicables aux

appareils numeriques de Classe A prescrites dans la norme sur le material brouilleur:

"Appareils Numeriques", NMB-003 edictee par l 'Industrie.

Safety Compliance

CSA/NRTL (C22.2.950, UL 1950)

EN 60950, (IEC 950)

Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlusssteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, dass diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluss an das Stromnetz die Anschlusswerte.
9. Verlegen Sie die Netzanschlussleitung so, dass niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Luftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Offnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 - a. Netzkabel oder Netzstecker sind beschädigt.
 - b. Flüssigkeit ist in das Gerät eingedrungen.
 - c. Das Gerät war Feuchtigkeit ausgesetzt.
 - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Zum Netzanschluss dieses Gerätes ist eine geprüfte Leitung zu verwenden. Für einen Nennstrom bis 6 A und einem Gerategewicht größer 3 kg ist eine Leitung nicht leichter als H05VV-F, 3G, 0,75 mm² einzusetzen.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70 dB(A) oder weniger.

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Chapter 1 - Introduction

ABOUT THE EZ CONNECT USB/ETHERNET CONVERTER

SMC's family of USB products offers a convenient and cost-effective means of bringing straightforward peripheral connectivity to the desktop based on the Universal Serial Bus (USB). These products feature true plug-and-play connection of PC peripherals "outside the box" and mark a significant advance in desktop cable management. Using the EZ Connect(tm) USB/Ethernet Converter you can simplify PC connections in the home, office or on the road.

The Universal Serial Bus is designed to replace the current serial, parallel, and other port types used on a PC with a single universal interface. Many different types of devices can be attached to a single PC USB interface by using a cascade of USB hubs (such as SMC's EZ Hub USB).

USB uses a unique cable and connector system. The "upstream" side of the USB cable ("A" side) connects to a USB hub or PC; and the "downstream" side ("B" side) connects to USB devices or to another hub's A side. The USB/Ethernet Converter has a "B" side connector on one side and an RJ-45 Ethernet connector on the other side. This USB Ethernet converter allows you to connect to a 10BASE-T or 100BASE-TX LAN using your computer's USB interface.



SMC2208USB/ETH

Features and Benefits

- * USB specification 1.0 & 1.1 for standards-based compliance to ensure compatibility
- * IEEE 802.3 for 10Base-T and IEEE 802.3u for 100Base-TX compliant
- * Automatically negotiates 10 or 100 Mbps connection rate, depending on the speed of the network for maximum data transfer
- * Provides full-duplex to enhance throughput of data with no latency
- * Support USB suspend / Resume detection logic to ensure consistent stream of information
- * Support Windows Plug & Play, Hot swap
- * 3.3V low power consumption
- * LEDs diagnostics and monitoring indicators

Network interface

RJ-45 to connect with 10BASE-T or 100 BASE-TX Hub

Driver support

NDIS 5 Miniport Driver for Microsoft Windows 98/ME, and Windows 2000.

Physical characteristics

1. Temperature: 0 ~ 70degree Celsius
2. Humidity: 10% to 90%
3. Distance: 100 meters Hub to Node

Chapter 2 - Getting Started

After unpacking the EZ Connect(tm) USB/Ethernet Converter, check the contents of the box to be sure you have received the following components:

Equipment Checklist

- * USB 10/100 Ethernet Adapter
- * Driver Diskette
- * This Installation Guide
- * Warranty Registration Card

Power Requirements

USB devices can be either self-powered or bus-powered. A device which has no power connector is bus-powered, and derives its operating power from the USB connection directly. The EZ Connect(tm) USB/Ethernet Converter is bus-powered - all you need to do is plug it into a PC or self-powered USB hub.

System Requirements

To use the EZ Connect(tm) USB/Ethernet Converter you must have:

- * A host PC that supports the Universal Serial Bus
- * 16 MB of RAM
- * Windows 98 or sooner

You also need to provide a standard twisted-pair Ethernet cable to connect to a local network 10BASE-T/100BASE-TX hub or switch.

You will be installing the USB 10/100 Ethernet adapter in your computer.

In order to use this device, you must have a copy of Microsoft Windows 98/ME (or Windows 2000) operating system installed on your PC. Some versions of Windows 95 version B (OSR2) support USB, but the device drivers included in this package are designed specifically for Windows 98 and Windows 2000

Installing the USB 10/100 Ethernet Adapter

You will need to connect your new converter to the USB port of your Desktop or Laptop PC (shown below with a laptop).

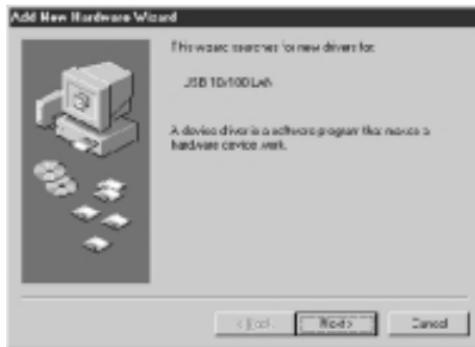


LED Display

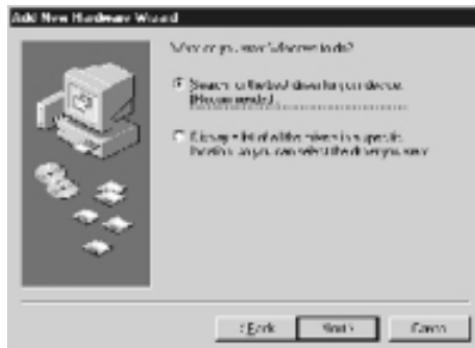
| LED | Condition | Status |
|----------|-----------|---|
| 10 Mbps | Green | This LED is used to indicate the Ethernet connection: Green means "connected with 10 Ethernet network" |
| 100 Mbps | Green | This LED is used to indicate the Ethernet speed: Green means "connected with 100Base-TX Ethernet network". |
| ACT | Green | This Green LED is used to indicate the network activity, and will flash on and off intermittently when the PC is transmitting or receiving packets from the network |

Installation - Windows 98

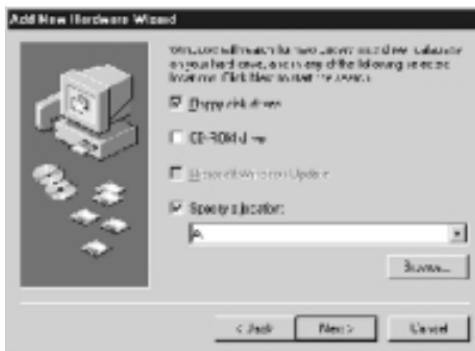
1. Make sure your PC is powered on and that you are in the Windows 98 operating system.
2. Insert the USB cable (the A-type connector) into the USB port on your PC. The system will display the “Add New Hardware Wizard” dialog box. Insert the “USB 10/100 LAN” driver diskette into floppy driver and then press “Next” button.



3. Select “Search for the Best Driver for your device (Recommended)”, press “Next” button.



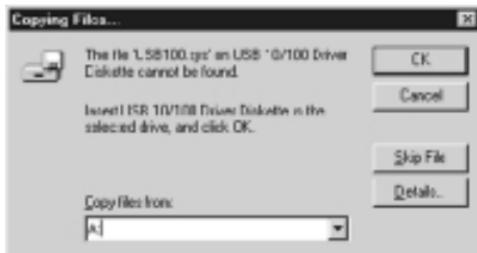
4. Select “Floppy disk drives” (or select “Specify a location” and type A:\ in the location), where the device information file (.INF file) and the driver USB100R.SYS can be found. Press “Next” button.



5. After Windows finds the driver, the following prompt will appear: “USB 10/100 Ethernet Adapter”, press “Next” button.



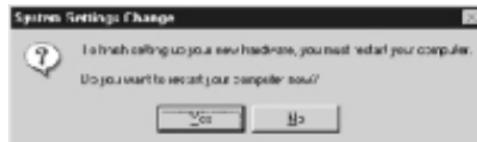
6. After the driver is found, Windows will begin to copy all the necessary files to install network function. If Windows tries to copy "USB100R.SYS" file and displays the following dialog box, just input "A:\ " to specify the location of this file.



7. Windows may request you to "Insert Windows 98 CD-ROM into the driver selected, and click OK". Follow the instruction and input CD-ROM or disks, as needed, direct Windows to the proper location, and then click "OK" button.
8. When Windows finishes the installation, the "USB 10/100 Ethernet Adapter" message box will be prompted, then click the "Finish" button.



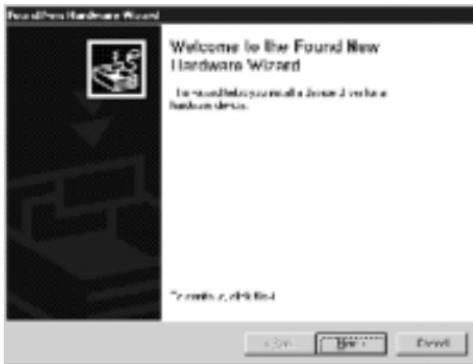
9. Your System will ask you "Do you want to restart your computer now". Click "Yes" to restart your computer.



10. After the computer has restarted, the network function will be ready.

Installation - Windows 2000

1. Make sure your PC is powered on and that you are in the Windows 2000 operating system.
2. Insert the USB cable (the A-type connector) into the USB port on your PC. The system will display the “Found New Hardware Wizard” dialog box. Insert the “USB 10/100 Ethernet Adapter” driver diskette into floppy drive and then press “Next” button.



3. Select “Search for a suitable driver for my device (Recommended)”, then press the “Next” button



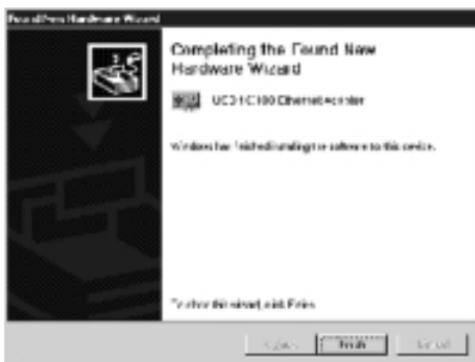
4. Select “Floppy disk drives” (or select “Specify a location” and type “A:\ ” in the location), where the device information file (.INF file) and the driver USB100.SYS can be found.



5. After Windows finds the driver, the following prompt will appear: “USB 10/100 Ethernet Adapter ”. Press “Next ” button, the driver then installs itself.



6. When Windows finishes the installation, the “USB 10/100 Ethernet Adapter” message box will be prompted, then click “Finish” button.



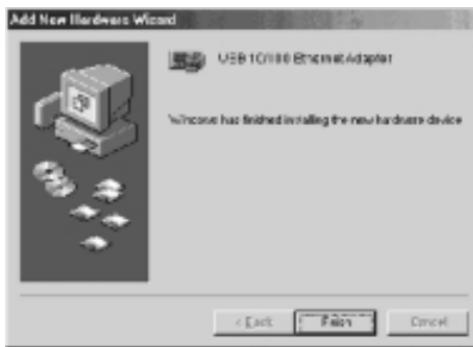
7. Please restart your computer at this point. Once your computer has restarted, network functionality will be ready.

Installation - Windows ME

1. Make sure your PC is powered on and that you are at the Windows ME operating system.
2. Insert the USB cable (the A-type connector) into the USB port on your PC, Windows ME will recognize the device. It will show “found New hardware Wizard”, select “Automatic search for a better driver” and insert the driver diskette or CD and click “Next”.



3. Windows ME will search and recognize the driver of the Device.
4. Windows will automatically copy the driver files and related files into the system.
5. After copying the driver files, the device installation will be complete, click “Finish” .



6. Please restart your computer at this point. Once the computer has restarted, network functionality will be ready.

Chapter 3 - Application

Network Connection

To connect the USB/Ethernet Converter to the local network, follow these steps:

1. Prepare a straight-through twisted-pair cable, maximum length 100 meters (328 feet). Use Category 3, 4 or 5 cable for connection to 10 Mbps Ethernet, or Category 5 cable for connection to 100 Mbps Fast Ethernet.
2. Connect one end of the cable to the RJ-45 port on the USB/ Ethernet Converter, and the other end to any available station port on a network hub or switch. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.
3. Check that the USB/Ethernet Converter has a valid connection by observing the Link/Act LED. If the indicator fails to light when you connect to a network hub or switch, see “Troubleshooting ” on page 8.

System Network Settings

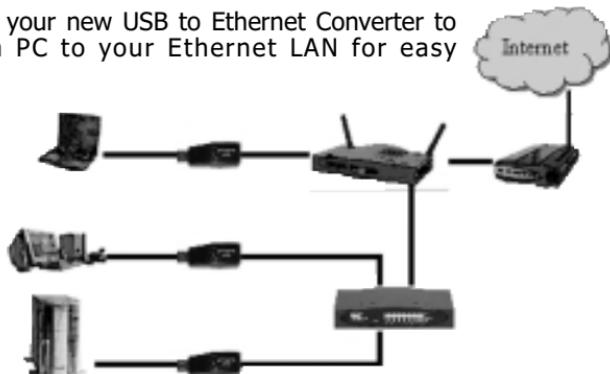
When installation is complete and you have rebooted your system, the USB/Ethernet Converter will appear to the system as a normal Ethernet network adapter.

To enable network access on your system, click on the “Network ” icon in the “Windows Control Panel.” Provide a name to identify your computer on the network, and assign it to a workgroup or domain if necessary. Add any additional network services or protocols you require.

If you need to access the Internet, be sure you configure the TCP/IP protocol by specifying a DHCP server, or manually entering a valid IP address, subnet mask, and default gateway. Also be sure to specify a domain name server which can translate web site names (URLs) to IP addresses. Then reboot your computer to enable your network settings.

USB Application Diagram

Use your new USB to Ethernet Converter to connect a PC to your Ethernet LAN for easy networking



Connection Path:

PC to USB to Ethernet to Hub/Switch to Broadband Router to Cable Modem

Chapter 4 - Troubleshooting

Symptom

You cannot connect to the network.

Probable Causes

- You did not install the software driver and USB/Ethernet Converter as indicated in this manual.

Possible Solutions

- Uninstall the driver from your operating system, power off and disconnect any devices attached to the converter, and disconnect it from the USB port.
- Reinstall the converter according to the installation instructions in this manual.

Symptom

The Link/Act LED does not light

Probable Causes

There is a connection or cabling problem

Possible Solutions

- Check that the network hub or switch is powered on.
- Be sure the network cable is properly connected to both devices.
- Verify that Category 5 cable is used for 100 Mbps connections and that the length of the cable does not exceed 100m (328 ft). • Check the network cable and connections for defects. Replace the defective cable if necessary.

Symptom

You cannot access a Windows Network Service.

Probable Causes

- The Windows service you are trying to access is restricted to a specific workgroup or domain.

Possible Solutions

- Open the Network icon under the Control Panel and assign your computer to a workgroup or domain. Then reboot your computer to enable the new settings.

Symptom

You cannot access a Netware Service.

Probable Causes

- You have not enabled NetWare service on your computer.
- You do not have a valid user ID or password for the server you are trying to access.

Possible Solutions

- Open the Network icon under the Control Panel and add Netware services. Then reboot your computer to enable the new settings.
- Contact your system administrator to obtain a user ID and password for the server you want to access.

Symptom

You cannot connect to the Internet.

Probable Causes

- You have not yet configured your computer for TCP/IP.

Possible Solutions

- If your network does not have a DHCP server (which can dynamically assign an IP address to your computer when it connects to the network), contact your network administrator to obtain a valid IP address. Click on the Network icon in the Control Panel, and specify the required TCP/IP settings. Then reboot your computer to enable the new settings.

SPECIFICATIONS

Model

SMC2208USB/ETH

Network Interface

USB cable with one upstream connector, USB Type A
One downstream port, RJ-45 Ethernet (10/100 Mbps)

Wiring Topology

Point-to-point connections

Access Method

USB Port: USB spec. 1.0 and 1.1

RJ-45 Port: IEEE 802.3 and 802.3u CSMA/CD
10 and 100 Mbps baseband, full and half duplex

Standards

USB Specification 1.0 and 1.1 (USB low-power device)

IEEE 802.3 Ethernet

IEEE 802.3u Fast Ethernet

System Requirements

A PC and operating system that supports the Universal Serial Bus
(Windows 98/2000/Me/)

Also requires device driver (included)

Size

2.5 x .5 x .5 in (at the largest point)

Weight

.25oz

Input Power

3.3 V, 450mA A maximum

Temperature

Operating: 0 to 70°C

Humidity

10 to 90% noncondensing

Compliances

FCC Class B

VCCI Class B

CE, Class B

Current Drivers

Windows 98

Windows 2000